CLAIMS

I claim:

1. An electro-optical connector comprising:

an electrical port configured to communicate first and second electrical signals into and out of the electro-optical connector; and

an optical output port in electrical communication with the electrical port, the optical output port configured to convert first electrical signals representing a first value into first optical signals representing the first value, and convert second electrical signals representing a second value into second optical signals representing the second value.

2. The electro-optical connector as set forth in claim 1, further comprising:

an optical input port in electrical communication with the electrical port, the optical input port configured to convert first optical signals representing a first value into first electrical signals representing the first value, and convert second optical signals representing a second value into second electrical signals representing the second value; and

logic configured to permit communication between the electrical port and a selected one of the optical input port and the optical output port.

3. The electro-optical connector as set forth in claim 2, where the optical input port comprises:

at least one receiver configured to receive a first optical signal representing a first value and to receive a second optical signal representing a second value; and

receive logic configured to convert received first and second optical signals into corresponding first and second electrical signals.

4. The electro-optical connector as set forth in claim 3, where the receive logic comprises a phototransistor.

5. The electro-optical connector as set forth in claim 1, where the optical output port comprises:

transmit logic configured to convert first and second electrical signals into corresponding first and second identifiably distinct optical signals;

at least one emitting device configured to emit the first and second identifiably distinct optical signals.

6. The electro-optical connector as set forth in claim 5, where the at least one emitting device comprises:

a first emitter configured to emit first optical signals in response to received first electrical signals; and

a second emitter configured to emit second optical signals in response to received second electrical signals.

7. The electro-optical connector as set forth in claim 5, where the at least one emitting device comprises:

an emitter configured to emit first optical signals in response to received first electrical signals, and to emit second optical signals in response to received second electrical signals.

8. The electro-optical connector as set forth in claim 7, where the first optical signals comprise a first wavelength and the second optical signals comprise a second wavelength.

9. In a system including at least first and second logic assemblies not in electrical data communication with each other, a connector associated with a first logic assembly comprising:

a connector body mountable to the first logic assembly; and

a transceiver supported by the connector body, the transceiver including:

an electrical path configured to communicate electrical signals to and from the connector to an electrical path on the first logic assembly, and

an optical transmitter configured to selectively transmit one of a first active optical signal derived from a first electrical signal and a second active

optical signal derived from a second electrical signal, the transmission directed to a connector on the second logic assembly to establish data communication between the first and second logic assemblies.

10. The connector as set forth in claim 9, where the transceiver further comprises:

an electro-optical receiver configured to receive identifiably distinct optical signals, and convert the received distinct optical signals into a corresponding one of first electrical signals and second electrical signals.

11. The connector as set forth in claim 10, where the electrical path is configured for changeable electrical signal communication to one of the optical transmitter and the electro-optical receiver.

12. The connector as set forth in claim 9, where the optical transmitter comprises:

a first transmitter configured to transmit the first active optical signal corresponding to the first electrical signal; and

a second transmitter configured to transmit the second active optical signal corresponding to the second electrical signal.

13. The connector as set forth in claim 9, where the optical transmitter comprises:

a transmitter configured to selectively transmit one of an optical signal having first identifiable characteristics and an optical signal having second identifiable characteristics.

14. The connector as set forth in claim 13, where the identifiable characteristics comprise wavelength.

15. The connector as set forth in claim 9, where the optical transmitter comprises a light emitting diode.

16. The connector as set forth in claim 10, where the electro-optical receiver comprises:

a first photo-transistor configured to convert first optical signals into first electrical signals; and

a second photo-transistor configured to convert second optical signals into second electrical signals.

17. The connector as set forth in claim 10, where the electro-optical receiver comprises:

a photo-transistor configured to convert received optical signals having a first wavelength into first electrical signals and to convert received optical signals having a second wavelength into second electrical signals.

18. The connector as set forth in claim 9, further comprising:

an orientation mechanism associated with the optical transmitter and configured to establish an optical signal path from the optical transmitter to an electro-optical receiver disposed on the second logic assembly.

19. The connector as set forth in claim 9, where the first active optical signal corresponds to a binary value and the second active optical signal corresponds to a different binary value.

20. An apparatus for transferring signals between assemblies in a computer system; the apparatus comprising on a first assembly:

a first optical transmitter configured to transmit an optical signal in response to receipt of a first electrical signal representing a binary value, where the first optical transmitter is configured for optical communication with a corresponding optical receiver disposed on a second assembly ;

a second optical transmitter configured to transmit an optical signal in response to receipt of a second electrical signal representing a different binary value, where the second optical transmitter is configured for optical communication with a corresponding optical receiver disposed on the second assembly;

a first optical receiver optically isolated from the transmitters, the first optical receiver configured to receive an optical signal representing the binary value from a

corresponding optical transmitter disposed on the second assembly and convert the received optical signal into an electrical signal representation of the binary value; and

a second optical receiver optically isolated from the transmitters, the second optical receiver configured to receive an optical signal representing the different binary value from a corresponding optical transmitter disposed on the second assembly and convert the received optical signal into an electrical signal representation of the different binary value.

21. The apparatus as set forth in claim 20, further comprising:

an electrical port in electrical communication with the first assembly; and

anti-contention means for preventing the electrical port from attempting to drive an electrical signal when another electrical signal is present at the electrical port.

22. A method comprising:

converting outbound electrical signals communicated into an electro-optical connector into optical signals and optically communicating the optical signals from the electro-optical connector;

converting optical signals communicated into the electro-optical connector into inbound electrical signals and electrically communicating the inbound electrical signals from the electro-optical connector; and

permitting a selected one of either the converting outbound electrical signals or the converting optical signals at a time.

23. The method as set forth in claim 22, where the permitting comprises:

presenting high impedance between an electrical port and one of an optical input port and an optical output port when an electrical signal is present between the electrical port and the other of the optical input port and the optical output port.